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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/995,467

11/28/2001

Matthew P.J. Baker

GB 000168

2280

24737

7590

02/23/2005

PHILIPS INTELLECTUAL PROPERTY & STANDARDS

P.O. BOX 3001

BRIARCLIFF MANOR, NY 10510

EXAMINER

PHAM, TUAN

ART UNIT

PAPER NUMBER

2643

DATE MAILED: 02/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/995,467

Applicant(s)

BAKER ET AL.

Examiner

TUAN A PHAM

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 11/28/01 06/17/02
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C 119(a)-(d), which papers have been placed of record in the file.

### ***Information Disclosure Statement***

2. The information disclosure statement (IDS) submitted on 11/28/2001 and 07/17/2002 has been considered by Examiner and made of record in the application file.

### ***Specification***

3. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

#### **Arrangement of the Specification**

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or  
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.).
- (e) BACKGROUND OF THE INVENTION.
  - (1) Field of the Invention.

- (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (f) BRIEF SUMMARY OF THE INVENTION.
  - (g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
  - (h) DETAILED DESCRIPTION OF THE INVENTION.
  - (i) CLAIM OR CLAIMS (commencing on a separate sheet).
  - (j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
  - (k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. **Claims 1, 3-9, and 11-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Freeburg (U.S. Patent No.: 5,095,535).**

**Regarding claims 1, 3, and 13**, Freeburg teaches a radio communication system and method having a communication channel comprising a plurality of paths between a transmitter having a plurality of antennas and a receiver having at least one antenna (see figure 1a, plurality antenna sectors A-F, path a, path b, col.3, ln.1-20), wherein the transmitter comprises path characterization means for determining at least one transmission property of each path (see col.7, ln.13-43, col.9, ln.1-7), categorization means for assigning a category to a set of data for transmission (see col.6, ln.1-28, category such as quality signal from 1-50) and mapping means responsive to the

category and the at least one transmission property for determining a mapping to apply the set of data to the transmitter's antennas, thereby determining over which path or paths the data will be transmitted (see col.5, ln.37-65, col.6, ln.1-15, the transmitter will determine the good quality path with the highest quality signal for mapping the priority data to transmit on that path).

**Regarding claim 4**, Freeburg further teaches a transmitter comprises the data for transmission may be provided from a plurality of sources and in that the categorization (i.e., highest signal and lowest signal) means is adapted to assign a category depending on the source of the data (see figure 5, col.9, ln.1-6).

**Regarding claim 5**, Freeburg further teaches a transmitter comprises the categorization means is adapted to assign different categories to respective segments of data from an application depending on at least one of their relative importance, required quality of service (see col.5, ln.54-68, col.6, ln.1-15).

**Regarding claim 6**, Freeburg further teaches a transmitter comprises the path characterization means is adapted to determine at least one of a delay, a signal-to-noise ratio, and a required transmission power for a given signal-to-noise ratio or error rate for each path (see col.6, ln.60-65).

**Regarding claim 7**, Freeburg further teaches a transmitter comprises parameter selection means are provided for setting at least one transmission parameter relating to the data depending on at least one of the path (or paths) assigned for transmission of the data and the category assigned to the data (see col.7, ln.13-22, highest quality signal assign on path 1-E).

**Regarding claim 8**, Freeburg further teaches a transmitter comprises a transmission parameter specifies the type of error control coding added to the data (see col.6, ln.60-65).

**Regarding claim 9**, Freeburg further teaches a transmitter comprises a transmission parameter (i.e., TDMA data transmission) specifies the modulation scheme to be used for transmission of the data (see col.5, ln.40-50).

**Regarding claim 11**, Freeburg further teaches a transmitter comprises a plurality of spatially separated sites, each site comprising at least one antenna (see figure 1a, plurality antenna sectors A-F, col.3, ln.1-20).

**Regarding claim 12**, Freeburg further teaches a transmitter comprises means are adapted to determine properties of the paths at least partly from measurements made by the receiver and signaled to the transmitter (see col.7, ln.13-42).

**Regarding claim 14**, Freeburg further teaches a transmitter comprises transmitting data requiring a higher quality of service over a better sub-channel than data requiring a lower quality of service (see col.7, ln.13-42).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. **Claims 2 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Freeburg (U.S. Patent No.: 5,095,535) in view of Papasakellariou (U.S. Patent No.: 6,700,919).**

**Regarding claim 2**, Freeburg teaches a radio communication system and method having a communication channel comprising a plurality of paths between a transmitter having a plurality of antennas and a receiver having at least one antenna (see figure 1a, plurality antenna sectors A-F, path a, path b, col.3, ln.1-20), wherein the transmitter comprises path characterization means for determining at least one transmission property of each path (see col.7, ln.13-43, col.9, ln.1-7), categorization

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means for assigning a category to a set of data for transmission (see col.6, ln.1-28, category such as quality signal from 1-50) and mapping means responsive to the category and the at least one transmission property for determining a mapping to apply the set of data to the transmitter's antennas, thereby determining over which path or paths the data will be transmitted (see col.5, ln.37-65, col.6, ln.1-15, the transmitter will determine the good quality path with the highest quality signal for mapping the priority data to transmit on that path).

It should be noticed that Freeburg fails to teach the receiver comprises means for performing channel estimation and means for signaling details of the output of the channel estimation to the path characterization means. However, Papasakellariou teaches such features (see col.10, ln.16-30).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Papasakellariou to Freeburg, in order to improve the channel estimation as suggested by Papasakellariou at column 2, lines 1-17).

**Regarding claim 10**, Papasakellariou further teaches a transmitter comprises signal-to-noise ratio to be achieved for at least one signal path (see col.7, ln.40-57).



### Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. In order to expedite the prosecution of this application, the applicants are also requested to consider the following references. Although Whinnett et al. (U.S. Patent No. 6,192,256), Schmidl et al. (U.S. Patent No. 6,831,956), and Lay (Pub. No.: US 2000/0122472) are not applied into this Office Action; they are also called to Applicants attention. They may be used in future Office Action(s). These references are also concerned for supporting the system and method for angle of arrival estimation and data detection using vector per-survivor processing of signals from an array of antennas.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Tuan A. Pham** whose telephone number is (703) 305-4987. The examiner can normally be reached on Monday through Friday, 8:00 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Curtis Kuntz can be reached on (703) 305-4708 and

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Or faxed to: (703) 872-9306

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Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington VA, Sixth Floor (Receptionist, tel. No. 703-305-4700).

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have question on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Art Unit 2643  
February 16, 2005  
Examiner

Tuan Pham

  
CURTIS RUNTZ  
SUPERVISORY PATENT EXAMINER  
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